

Respiratory virus infections and the development of childhood asthma

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Project description: One third of children suffer from acute wheezing illnesses, and the prevalence of childhood asthma is 7-9% in Finland. Respiratory virus infections are detected in 90-100% of these attacks. Our aim is to investigate viral and other environmental factors in combination to immunogenetics to find means to prevent asthma. Our special focus is on mechanisms of rhinovirus infections and allergic inflammation.

Publications:

- Smits HH, Hiemstra PS, da Costa CP, Ege M, Edwards M, Garn H, Howarth PH, Jartti T, de Jong EC, Maizels RM, Marsland B, McSorley HJ, Müller A, Pfefferle PI, Savelkoul H, Schwarze J, Unger W, von Mutius E, Yazdanbakhsh M, Taube C. Microbes and asthma: opportunities for intervention **J Allergy Clin Immunol** 2016;137(3):690-7.
- Heinonen S, Jartti T, Garcia C, Oliva S, Smitherman C, Anguiano E, de Steenhuijsen P, WAA, Vuorinen T, Ruuskanen O, Dimo B, Suarez CM, Pascual V, Ramilo O, Mejias A. Rhinovirus Detection in Symptomatic and Asymptomatic Children: Value of Host Transcriptome Analysis. **Am J Respir Crit Care Med** 2015;193(7):772-82.
- Jartti T, Nieminen R, Vuorinen T, Lehtinen P, Vahlberg T, Gern J, Camargo CA Jr, Ruuskanen O. Short- and long-term efficacy of prednisolone for first acute rhinovirus-induced wheezing episode. **J Allergy Clin Immunol** 2015;135(3):691-8.
- Jartti T, Hasegawa K, Mansbach JM, Piedra PA, Camargo CA Jr. Rhinovirus-induced bronchiolitis: lack of association between virus genomic load and short-term outcomes. **J Allergy Clin Immunol** 2015;136(2):509-12
- Hasegawa K, Jartti T, Mansbach JM, Laham RF, Jewell AM, Espinola JA, Piedra PA, Camargo CA Jr. Respiratory syncytial virus genomic load and disease severity among children hospitalized with bronchiolitis: Multicenter cohort studies in the US and Finland. **J Infect Dis** 2015;211(10):1550-9.

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